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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------|----------------------------|------------------------|
| 10/625,296 | 07/22/2003 | Hector Ricardo Davila | IRI05480 | 7879 |
| 23330 7590 06/29/2007 MOTOROLA, INC. LAW DEPARTMENT 1303 E. ALGONQUIN ROAD SCHAUMBURG, IL 60196 | | | EXAMINER WONG, XAVIER S | |
| | | | ART UNIT 2616 | PAPER NUMBER |
| | | | MAIL DATE 06/29/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/625,296 | DAVILA ET AL. | |
| | Examiner | Art Unit | |
| | Xavier Wong | 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22nd July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22nd July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ✓ | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27 – 29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Data Structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held non-statutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by **Amri et al (U.S Pat 5,535,199)**.

Consider claim 1, **Amri et al** disclose a TCP/IP header compression network containing Data Terminal Equipment (DTE/transmitting unit) that utilizes Van Jacobson header compressor/decompressor (col. 2 lines 50-63; *abstract*); generating a new TCP header then sends the TCP header to and from the DTE inherently unidirectional towards another host (col. 7 lines 1-10; clm. 15; fig. 4).

Claims 27 – 29 are rejected under 35 U.S.C. 102(b) as being anticipated by **Jacobson (RFC 1144 – “Compressing TCP/IP Headers for Low-Speed Serial Links”)**.

Consider claims 27 – 29, **Jacobson** disclose a data structure for a compressed TCP/IP packet header comprising:

(27) a mask field with predetermined bit pattern for indicating a unidirectional data transfer condition to a Van Jacobson header compressor/decompressor (pg. 14 lines 13-16; pg. 29 line 25);

(28) TCP checksum field (pg. 35 lines 175-178 & 180-205);

(29) connection identification field (pg. 9 lines 20-22; pg. 35 lines 180-205).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Bunn et al** (U.S Pub 2002/0073227 A1).

Consider claim 2, and as applied to claim 1, **Amri et al** disclose the claimed invention except the steps of: determining if a data packet is a first data packet; and if the data packet is not the first data packet, then the transmitting unit performs sending new TCP header. **Bunn et al** disclose a TCP protocol ability to learn a first (or

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subsequent / not first) packet; and sending a (new) TCP header to a receiver (from a transmitting unit) for non-first packets (paragraphs 0216 & 0219; fig. 14A). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of determining if a data packet is a first data packet; and if the data packet is not the first data packet, then the transmitting unit performs sending new TCP header as taught by **Bunn et al**, in the method of **Amri et al**, in order to alleviate traffic when transporting huge size data packets.

Claims 3 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199), in view of **Bunn et al** (U.S Pub 2002/0073227 A1) and in further view of **Jacobson** (RFC 1144 – “*Compressing TCP/IP Headers for Low-Speed Serial Links*”).

Consider claims 3 – 5, and as applied to claim 2, **Amri et al**, as modified by **Bunn et al**, disclose the claimed invention except the step of setting:

(i) a predetermined bit pattern in a first byte of a new TCP header to indicate unidirectional data transfer;

(ii) a connection identification;

(iii) a TCP checksum in the new TCP header

Jacobson disclose all three limitations above on pg. 7 lines 20-22, pg. 8 fig. 5 / lines 1-4 as well as pg. 11 lines 35-40. It would have been obvious to one of ordinary skill in the art to incorporate the teachings of **Jacobson** in the method of **Amri et al**, as modified by **Bunn et al**, for compressing headers and achieving the same goal.

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al (U.S Pat 5,535,199)** in view of **Bunn et al (U.S Pub 2002/0073227 A1)** and **Jacobson (RFC 1144 – “Compressing TCP/IP Headers for Low-Speed Serial Links”)**, as applied to claim 5, and in further view of **Yoshimura et al (U.S Pub 2001/0030963 A1)** and **Na et al (U.S Pub 2004/0071096 A1)**.

Consider claim 6, and as applied to claim 5, **Amri et al**, as modified by **Bunn et al**, disclose the claimed invention except a UDP checksum in place of a TCP checksum in a new TCP header. **Yoshimura et al** disclose a compressed RTP/UDP/IP header with UDP checksum (paragraph 0158; fig. 11B). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a UDP checksum in place of a TCP checksum with a TCP header as taught by **Yoshimura et al**, in the method of **Amri et al**, as modified by **Bunn et al** and **Jacobson**, for alleviating congestion. However, **Yoshimura et al** did not explicitly mention how the IP portion of the header is related to TCP. **Na et al** disclose a communication and header compression system using TCP based on IP – TCP/IP (paragraph 0034). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of an IP header, via TCP protocol, utilizing UDP checksum in place of a TCP checksum as taught by **Na et al**, in the method of **Amri et al**, as modified by **Bunn et al**, **Jacobson** and **Yoshimura et al**, for upper and lower layer protocol communication.

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Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al (U.S Pat 5,535,199)** in view of **Bunn et al (U.S Pub 2002/0073227 A1)** and in further view of **Le (U.S Pat 7,158,491 B1)**.

Consider claim 7, and as applied to claim 2, **Amri et al**, as modified by **Bunn et al**, disclose the claimed invention except a transmitting unit compressing a UDP header and a RTP header. **Le** discloses the header compressor (in transmitting unit) compressing IP/UDP/RTP headers (col. 15 lines 64-65; fig. 10 items 12 & 474). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a transmitting unit compressing a UDP header and a RTP header as taught by **Le**, in the method of **Amri et al**, as modified by **Bunn et al**, for filtering packet routes that only correspond to real-time logical channel.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al (U.S Pat 5,535,199)** in view of **Bunn et al (U.S Pub 2002/0073227 A1)**, and in further view of **Yoshimura et al (U.S Pub 2001/0030963 A1)**.

Consider claims 8 and 9, and as applied to claim 2 and 8, **Amri et al**, as modified by **Bunn et al**, disclose the claimed invention except a transmitting unit sending a complete UDP header and complete RTP header for a first data packet. **Yoshimura et al** disclose sending from sender node full header RTP/UDP/IP packets for first packet (paragraphs 0010 lines 1-14, 0011 & 0067). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a transmitting unit sending a complete UDP header and complete RTP header for a first data packet as taught by

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Yoshimura et al in the method of **Amri et al**, as modified by **Bunn et al**, for referencing succeeding packets.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Bunn et al** (U.S Pub 2002/0073227 A1) and **Yoshimura et al** (U.S Pub 2001/0030963 A1), as applied to claim 8, and in further view of **Sen et al** (U.S Pat 6,765,909 B1).

Consider claim 10, and as applied to claim 8, **Amri et al**, as modified by **Bunn et al** and **Yoshimura et al**, disclose the claimed invention except a transmitting unit sending a complete TCP/IP header for a first data packet. **Sen et al** disclose a compressor (from the transmitting side) generates an uncompressed/complete TCP/IP packet for a first packet (col. 5 lines 35-42). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a transmitting unit sending a complete TCP/IP header for a first data packet as taught by **Sen et al**, in the method of **Amri et al**, as modified by **Bunn et al** and **Yoshimura et al**, for packet referencing.

Claims 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Yoshimura et al** (U.S Pub 2001/0030963 A1).

Consider claims 11, 12 and 14, and as applied to claims 1 and 11, **Amri et al** disclose the claimed invention except a receiving unit storing UDP header and RTP header information for a first data packet. **Yoshimura et al** disclose storing

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RTP/UDP/IP headers and information into an internal storage memory for a first packet received in a receiving node (paragraphs 0010 lines 16-21 & 0108; fig. 2). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a receiving unit storing UDP header and RTP header information for a first data packet as taught by **Yoshimura et al**, in the method of **Amri et al**, for referencing succeeding packets.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S. Pat 5,535,199) in view of **Yoshimura et al** (U.S. Pub 2001/0030963 A1) and in further view of **Jacobson** (RFC 1144 – “Compressing TCP/IP Headers for Low-Speed Serial Links”).

Consider claim 13, and as applied to claim 11, **Amri et al** disclose the claimed invention except a receiving unit for storing TCP/IP header information. **Jacobson** disclose saved TCP/IP headers and information in SLIP input's (receiving unit) indexed slots (pg. 7 lines 7-9; fig. 4). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a receiving unit for storing TCP/IP header information as taught by **Jacobson** in the method of **Amri et al** as modified by **Yoshimura et al** for packet referencing.

Claims 15 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S. Pat 5,535,199) in view of **Yoshimura et al** (U.S. Pub 2001/0030963 A1) and in further view of **Sen et al** (U.S. Pat 6,765,909 B1).

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Consider claim 15, and as applied to claim 11, **Amri et al**, as modified by **Yoshimura et al**, disclose the claimed invention except if the data packet is not a first packet, a receiving unit receives a new TCP header and a compressed UDP header and RTP header. **Sen et al** disclose if a TCP session is not new (not a first packet), then a PDSN (from the receiving side) receives (new) TCP header and compressed RTP/UDP/IP headers (col. 6 lines 34-45 & col. 7 lines 3-14; fig. 5). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of if the data packet is not a first packet; a receiving unit receives a new TCP header and a compressed UDP header and RTP header as taught by **Sen et al**, in the method of **Amri et al**, as modified by **Yoshimura et al**, for packet referencing.

Consider claims 16 and 17, and as applied to claim 15, **Yoshimura et al** further disclose a receiver node restores RTP/UDP/IP headers (paragraph 0016).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Yoshimura et al** (U.S Pub 2001/0030963 A1) and of **Sen et al** (U.S Pat 6,765,909 B1), as applied to claim 15, and in further view of **Na et al** (U.S Pub 2004/0071096 A1).

Consider claim 18, and as applied to claim 15, **Amri et al**, as modified by **Yoshimura et al** and **Sen et al**, disclose the claimed invention except regenerating a TCP/IP header. **Na et al** disclose recovering a TCP/IP header (paragraph 0059). It would have been obvious to one of ordinary skill in the art to incorporate the teachings

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of regenerating TCP/IP header as taught by **Na et al**, in the method of **Amri et al**, as modified by **Yoshimura et al** and **Sen et al**, for packet referencing.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Yoshimura et al** (U.S Pub 2001/0030963 A1) and of **Sen et al** (U.S Pat 6,765,909 B1), as applied to claim 15, and in further view of **Jacobson** (RFC 1144 – “Compressing TCP/IP Headers for Low-Speed Serial Links”).

Consider claim 19, and as applied to claim 15, **Amri et al**, as modified by **Yoshimura et al** and **Sen et al**, disclose the claimed invention except discarding a TCP/IP header. **Jacobson** discloses the discarding of TCP and IP (TCP/IP) headers (pg. 12 lines 11-21). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of discarding a TCP/IP header as taught by **Jacobson**, in the method of **Amri et al**, as modified by **Yoshimura et al** and **Sen et al**, for new header replacement.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Greis et al** (U.S Pub 2004/0081151 A1).

Consider claims 20 and 21, and as applied to claim 1, **Amri et al** disclose the claimed invention except a transmitting unit is a mobile unit and the receiving unit is a PDSN; and vice versa. **Greis et al** disclose a transmitting as well as a receiving entity may be mobile terminal or router wherein PDSN is known in the art as a router (paragraphs 0032, 0045, 0071 lines 8-14; fig. 1 items 10, 40, 50; fig. 3). It would have

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been obvious to one of ordinary skill in the art to incorporate the teachings of a transmitting unit is a mobile unit and the receiving unit is a PDSN; and vice versa as taught by **Greis et al**, in the method of **Amri et al**, for establishing connection.

Claims **22** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al (U.S Pat 5,535,199)** in view of **Sen et al (U.S Pat 6,765,909 B1)**.

Consider claim **22**, and as applied to claim **1**, **Amri et al** disclose the claimed invention except a transmitting unit concatenating a compressed RTP and UDP header with a new TCP header. **Sen et al** disclose a header compression method suitable for (a transmitting unit to) TCP and RTP/UDP (concatenated) headers (col. 7 lines 3-7). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of a transmitting unit concatenating compressed RTP and UDP header with a new TCP header as taught by **Sen et al**, in the method of **Amri et al**, for real-time compression.

Claims **23** and **25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al (U.S Pat 5,535,199)** in view of **Na et al (U.S Pub 2004/0071096 A1)**.

Consider claims **23** and **25**, and as applied to claim **1**, **Amri et al** disclosed the claimed invention except if it is not a first packet then:

- (i) a PDSN receives an uncompressed TCP/IP header;
- (ii) the PDSN sends new TCP/IP header; and,
- (iii) the PDSN regenerates uncompressed header

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Na et al disclose in figure 8, a 7th full/uncompressed packet (not 1st "full packet," yet operation treated as a 1st packet) received by receiving node (paragraph 0068) which may be a PDSN router 18 according to figure 1, then eventually the uncompressed packet will be sent off to network 30 and recovers the full header (paragraphs 0029 & 0058). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of if it is not a first packet then: a PDSN receives an uncompressed TCP/IP header; the PDSN sends new TCP/IP header; and, the PDSN regenerates the uncompressed TCP/IP header as taught by **Na et al**, in the method of **Amri et al**, for packet traffic control.

Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amri et al** (U.S Pat 5,535,199) in view of **Na et al** (U.S Pub 2004/0071096 A1).

Consider claims 24 and 26, and as applied to claims 23 and 25, **Amri et al** disclosed the claimed invention except if it is a first packet then:

- (i) a PDSN receives an uncompressed TCP/IP header;
- (ii) the PDSN sends new TCP/IP header; and,
- (iii) the PDSN stores uncompressed header

Na et al disclose a 1st packet full/uncompressed packet received by receiving node (paragraph 0058) which may be a PDSN router 18 according to figure 1, then eventually the uncompressed packet will be sent off to network 30 and stores the full header in a memory 116 in fig. 4 (paragraph 0056). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of if it is not a first packet then: a

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PDSN receives an uncompressed TCP/IP header; the PDSN sends new TCP/IP header; and, the PDSN stores the uncompressed TCP/IP header as taught by **Na et al**, in the method of **Amri et al**, for packet traffic control.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A.) **Lupien et al (U.S Pub 2002/0097701 A1)** mention headerless packet transmission for a first or subsequent packets.

B.) **Pelletier et al (U.S Pub 2004/0042507 A1)** mention header compression technique involving mobile station and PDSN.

C.) **Liao et al (U.S Pub 2002/0097722 A1)** mention Van Jacobson Compression and Transmission Scheme.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Hand-delivered responses should be brought to:

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401 Dulany Street

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Szewai Wong whose telephone number is (571) 270-1780. The examiner can normally be reached on Monday through Friday 8 am - 5 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S Rao can be reached on (571)272-3174 . The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.

Xavier Szewai Wong
X.S.W/xsw
19th June 2007

Seema S. Rao
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